Amendment to the Claims

1-6. (canceled)

7. (currently amended) An HIV-2 packaging vector ~~derived from HIV-2~~, comprising a 5' splice donor site, and an upstream and a downstream packaging signal sequence, wherein both the upstream and downstream packaging signal sequences are functionally deleted to ~~substantially eliminate~~ reduce packaging of progeny viral RNA by more than 80%, but the splice donor site (SD) is functionally intact.

8. (previously presented) The packaging vector of claim 7 wherein functional deletion of the upstream and downstream packaging signal sequences comprises deletion of no more than 164 nucleotides upstream of the SD and deletion of no more than 62 nucleotides downstream of the SD.

9. (previously presented) The packaging vector of claim 7, wherein functional deletion of the upstream and downstream packaging signal sequences comprises:

deletion of nucleotides 306-458 upstream of the SD, and deletion of nucleotides 486-538 downstream of the SD; or

deletion of nucleotides 306-370 upstream of the SD, and deletion of nucleotides 486-538 downstream of the SD; or

deletion of nucleotides 371-458 upstream of the SD, and deletion of nucleotides 486-538 downstream of the SD.

10. (canceled)

11. (original) The packaging vector of claim 7 further comprising a 3' LTR, a 5' LTR, and a heterologous promotor CMV.

12. (currently amended) The packaging vector of claim ~~8~~10, wherein the 3'LTR is functionally deleted.

13. (original) The packaging vector of claim 12, wherein the 3'LTR is replaced with a heterologous transcriptional termination sequence.

14. (original) The packaging vector of claim 7, wherein the upstream packaging signal corresponds to nucleotides downstream from nucleotide 300 and upstream from the SD, and the downstream packaging signal corresponds to nucleotides downstream from the SD and upstream from nucleotide 539.

15. (currently amended) The packaging vector of claim 7, wherein the functional deletions in the packaging vector decreases ~~syncitia~~ syncytia induction relative to an HIV-2 vector having functional upstream and downstream packaging signal sequences.

16. (canceled)

17. (currently amended) An HIV packaging vector comprising:

(a) a DNA segment from an HIV-2 genome, wherein the DNA segment comprises the HIV gag, pol and env genes; wherein the vector lacks an HIV-2 packaging sequence necessary to package native HIV-2 viral RNA into virions, wherein the HIV-2 packaging sequence is a combination of a nucleotide sequence located between a leader sequence upstream from a 5' splice donor site and a nucleotide sequence located between the 5' splice donor site and an initiation codon of the gag gene on the HIV-2 genome;

(b) an intact 5' splice donor site; and

(c) a promoter operably linked to the DNA segment of (a), wherein the vector, when introduced into a eukaryotic host cell, expresses HIV-2 Gag, Pol, Rev, Tat, and Env proteins to form HIV-2 virions that contain vector RNA but not native viral RNA ~~that are not packaged~~.

18-20. (canceled)

21. (currently amended) An isolated cell that expresses or has been transfected with the packaging vector of claim 7.

22-42. (canceled)

43. (currently amended) An isolated cell that expresses or has been transfected with the packaging vector of claim 17.

44. (previously presented) The packaging vector of claim 7, wherein functional deletion of the upstream and downstream packaging signal sequences comprises deletion of nucleotides 306-458 upstream of the SD, and deletion of nucleotides 486-538 downstream of the SD.

45. (previously presented) The packaging vector of claim 7, wherein functional deletion of the upstream and downstream packaging signal sequences comprises deletion of nucleotides 306-370 upstream of the SD, and deletion of nucleotides 486-538 downstream of the SD.

46. (previously presented) The packaging vector of claim 7, wherein functional deletion of the upstream and downstream packaging signal sequences comprises deletion of nucleotides 371-458 upstream of the SD, and deletion of nucleotides 486-538 downstream of the SD.

47. (new) The HIV-2 packaging vector of claim 44, wherein the vector comprises the nucleic acid sequence shown in SEQ ID NO: 4.

48. (new) The HIV-2 packaging vector of claim 7, further comprising a functionally deleted envelope, wherein the function of the envelope is provided in trans by a second vector.

49. (new) The HIV-2 packaging vector of claim 48, wherein the HIV-2 packaging vector comprises SEQ ID NO: 7, 21 or 22 and the second vector comprises SEQ ID NO: 9 or 23.

50. (new) The HIV-2 packaging vector of claim 7, wherein both the upstream and downstream packaging signal sequences are functionally deleted to eliminate packaging of progeny viral RNA.

51. (new) An SIV packaging vector comprising a 5' splice donor site, and an upstream and a downstream packaging signal sequence, wherein both the upstream and downstream packaging signal sequences are functionally deleted to reduce packaging of progeny viral RNA by more than 80%, but the splice donor site (SD) is functionally intact.

52. (new) The packaging vector of claim 50 wherein functional deletion of the upstream and downstream packaging signal sequences comprises deletion of no more than 164 nucleotides upstream of the SD and deletion of no more than 62 nucleotides downstream of the SD.

53. (new) The packaging vector of claim 50, wherein functional deletion of the upstream and downstream packaging signal sequences comprises deletion of nucleotides 318-466 upstream of the SD, and deletion of nucleotides 493-538 downstream of the SD.

54. (new) The packaging vector of claim 50, further comprising a 3' LTR, a 5' LTR, and a heterologous promotor CMV.

55. (new) The packaging vector of claim 53, wherein the 3'LTR is functionally deleted.

56. (new) The packaging vector of claim 54, wherein the 3'LTR is replaced with a heterologous transcriptional termination sequence.

57. (new) The packaging vector of claim 50, wherein the functional deletions in the packaging vector decreases syncytia induction relative to an SIV vector having functional upstream and downstream packaging signal sequences.

58. (new) An isolated cell that expresses or has been transfected with the packaging vector of claim 50.